



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

**NOTICE OF ALLOWANCE AND ISSUE FEE DUE**

LM01/0727

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APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
09/048,076	03/26/98	005	AZAD, A	2/41 07/27/00
First Named Applicant	MAEDA,	35 USC 154(b) term ext. - 8 Days.		

TITLE OF INVENTION VECTOR SEARCH METHOD

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2	7217-55493	704-222.000	P83	UTILITY	NO	\$1210.00 10/27/00

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.**

**THE ISSUE FEE MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.**

**HOW TO RESPOND TO THIS NOTICE:**

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
- B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

PATENT AND TRADEMARK OFFICE COPY

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**Notice of Allowability**

Application No.

09/048,076

Examiner

ABUL K. AZAD

Applicant(s)

MAEDA ET AL.

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.

1. ☒ This communication is responsive to communication filed on May 16, 2000.
2. ☒ The allowed claim(s) is/are 2-6.
3. ☐ The drawings filed on \_\_\_\_\_ are acceptable.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All    b) ☐ Some\*    c) ☐ None    of the CERTIFIED copies of the priority documents have been
1. ☒ received.
2. ☐ received in Application No. (Series Code / Serial Number). \_\_\_\_\_.
3. ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

5. ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

A SHORTENED STATUTORY PERIOD FOR REPLY to comply with the requirements noted below is set to EXPIRE **THREE MONTHS** FROM THE "DATE MAILED" of this Office Action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be available under the provisions of 37 CFR 1.136(a).

6. ☐ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
7. ☒ Applicant **MUST** submit NEW FORMAL DRAWINGS
- (a) ☐ because the originally filed drawings were declared by applicant to be informal.
- (b) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review( PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No. \_\_\_\_\_.
- (c) ☒ including changes required by the proposed drawing correction filed 16 May 2000, which has been approved by the examiner.
- (d) ☐ including changes required by the attached Examiner's Amendment / Comment.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftsperson.

8. ☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Any reply to this letter should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE / SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.

**Attachment(s)**

- 1 ☐ Notice of References Cited (PTO-892)
- 3 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 5 ☐ Information Disclosure Statements (PTO-1449), Paper No. \_\_\_\_\_.
- 7 ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- 2 ☐ Notice of Informal Patent Application (PTO-152)
- 4 ☐ Interview Summary (PTO-413), Paper No. \_\_\_\_\_.
- 6 ☐ Examiner's Amendment/Comment
- 8 ☒ Examiner's Statement of Reasons for Allowance
- 9 ☐ Other

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## **DETAILED ACTION**

### ***Response to Amendment***

1. This is in response to communication filed on May 16, 2000.
2. Claims 2-6 are pending in this action. Claim 1 has been canceled. Claim 2 has been amended.
3. Applicant's arguments with respect to claims 2-6 have been fully considered and they are deemed to be persuasive.

### ***Allowable Subject Matter***

4. Claims 2-6 are allowed over the prior art of record.
5. The following is an examiner's statement of reasons for allowance:

As per claim 2, the applicant teaches a vector search method for obtaining an optimal sound source vector in vector quantization, in which a difference error between a prediction vector and an input vector is calculated in such a way that combinations of factors respectively multiplied by a plurality of basic vectors are changed according to the Gray code, the claimed recites specific embodiments of: "obtaining an intermediate value  $G_u$  by calculation of a synthetic vector created according to a sign word  $u$  of the Gray code; expressing an intermediate value  $G_u$  by an intermediate value  $G_i$ , obtained by calculation of a syntetic vector created according to an adjacent signa word  $i$  different from said signaword  $u$  only in a predetermined bit position  $v$ , and a change  $\Delta G_u$  calculated by utilized the Gray code characteristic; using said  $\Delta G_u$  to express change

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$\Delta G_u'$  between an intermediate value  $G_i'$  according to another sign word  $i'$  in said Gray code and an intermediate value  $G_u'$  according to an adjacent sign word  $u'$  different from said sign word  $i'$  only in a predetermined bit position  $v$ ; and using said intermediate value  $G_i$  and said change  $\Delta G_u'$  to obtain said optimal sound source vector." The prior art of record fails to show or fairly suggest the claimed combinations of features.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Abul K. Azad** whose telephone number is **(703) 305-3838**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **David R. Hudspeth**, can be reached at **(703) 308-4825**.

Any response to this action should be mailed to:

**Commissioner for Patents**

**Washington, D.C. 20231**

Or faxed to:

**(703) 305-9508**

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(For informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is **(703) 305-3900**.

Abul K. Azad

July 20, 2000

  
DAVID R. HUDSPETH  
SUPERVISORY PATENT EXAMINER  
GROUP 2700